



IMPACT OF ICT ON EDUCATION: A STUDY WITH SPECIAL REFERENCE TO TINSUKIA DISTRICT OF ASSAM

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ABSTRACT

The use of Information and Communication technology in recent times are quite inevitable. Information and Communication technology plays a pre-dominant role in almost all aspects of human life such as economic, social, cultural, etc. The use of information and communication technologies has gained wide popularity in the field of education as well in recent times. Information and communication technologies such as computers, projectors, mobile phones, internet, etc play an important role in the teaching-learning process. The use of information and communication technologies can go a long way in enhancing the quality of education imparted by the teachers and also helps in improving the outcome of students. Information and communication technologies can help in continuous flow of knowledge. Instance can be given here of internet where both the teachers and students can gain wide information regarding any field of query at any time and place. During the Coronavirus-19 pandemic situation it was visible that the teaching-learning process was not possible to continue in the traditional face-to-face mode but because of the availability of information and communication technologies the teaching-learning process continued in different virtual platforms. Thus, use of information and communication technologies have important role in the field of education. Thus, the present study tried to examine the information and communication technologies use for educational purposes and also to examine the impact of information and communication technologies on education by collecting primary data from the Tinsukia district by considering all the seven blocks of that district. In order to examine the information and communication technologies impact on education Chi-square test was conducted. The study found that information and communication technologies have impact on education in the area under study.

Keywords: Information and Communication Technology, Education, Teaching-Learning, Chi-square test.

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1. INTRODUCTION

Information and Communication Technology plays an important role in today's world in almost all fields. In recent times, information and communication technology is an indispensable part of human life. Information and communication technology have evolved over the years and its contribution in different fields in enhancing efficiency is quite visible. In recent years, use of information and communication technology (ICT) in the field of teaching-learning is becoming inevitable. Use of ICT's in teaching-learning process can enhance the quality of education imparted by the teacher. According to a report, published by UNESCO in 2003 highlighted that ICT's helps in imparting knowledge and also emphasized its importance especially at the school level which can pave way in generating a new way of thinking and designing the system and process of education and hence improves the educational quality (Sangra & Sanmamed, 2016).

Integration of ICT's use in education i.e. primary, secondary and higher levels can go a long way in enhancing the outcomes of students. The quality of education in developed countries is better as compared to the developing and less developed countries. The developed countries take up certain policies which help in enhancing the quality of education. Examples can be cited of the American and European countries, these countries have adopted the process of instruction through ICT use imperative by a legislative act (Karamti, 2016). ICT's use provides infinite knowledge and information. For instance, the use of internet can provide both the teacher and student unlimited information in different areas of interest. No doubt every aspect has both sides but when used for the correct purpose can help in improving the quality of the recipient. The most commonly used ICT's for educational purpose comprises of computers, projectors, mobile phones, internet, etc. One of the major weapons in today's education is the use of ICT's. ICT's have removes the barriers in imparting education which is quite prominent in the last few months. Due to outbreak of the Coronavirus-19 pandemic, the normal education life was disrupted with the other aspects of human life. The teaching-learning process was impossible through the traditional face-to-face mode but due to the availability of ICT's the teaching-learning process could continue. Thus, ICT's helps in the process of teaching-learning and also helps in improving the quality of education.

Thus, the present paper makes an effort to study the use of information and communication technology for educational purpose by the students and also to examine whether information and communication technology have any impact on educational attainments of students. The study was made on Tinsukia district of Assam which is one of the top ten districts in the State in ICT's use. .

2. LITERATURE REVIEW

Youssef & Dahmani (2008) in their study tried to find out whether Information and Communication Technology (ICT) have any impact on students performance by focusing specially on higher education. Both student performance and level of achievement are influenced by ICT usage.

Fu (2013) made a review on ICT use in education. The study focused on the works done on ICT's for educational purpose and also highlighted the challenges and its importance in education especially at the school level.

Cener, Acun & Demirhan (2015) made a study on ICT's impact on pupil's achievement and attitudes in social studies. To make the analysis academic achievement tests, attitude post measurement scale and attitude measurement scale on ICT was used. The study found that there was a positive relationship between use of ICT's on pupil's achievements and attitudes on social studies.

Karamiti (2016) made a study to find out whether there was any relationship between use of ICT's and academic performance in higher education. The study was conducted in Tunisia by doing a survey. The study considered 377 college students and teachers. The results of the study found that ICT's have a negative effect on educational achievement.

Sangra & Sanmamed (2016) made a study to analyze the use of ICT's in teaching-learning process by considering both primary and secondary school levels. The study found that ICT's use can help in attaining better results in teaching-learning also recommended that emphasis needs to be given on models of teaching to improve further outcomes in future.

Mhlana & Krauss (2017) in their study on information and communication technology impact in education focused their interest on gender perspectives. The study focused on marginalized rural schools of South Africa. The study found that both girls and boys used ICT's for homework and social networking purposes but they used ICT's differently when they worked together.

Basri, Alandijani & Almadami (2018) conducted a study to investigate the impact of ICT's at university level students. Data were collected from 1000 students from 4 Saudi universities students. The study found that use of ICT's improved female performance more than that of male students.

From the above analysis it was found that to assess the ICT's impact on education some studies were done in different parts of the world but no study is being conducted in Assam and particularly at a micro level in the district of Tinsukia in Assam. So, this study focuses on analyzing the use of ICT's among the students in the Tinsukia district of Assam and to find out whether ICT's use among the students have any impact on their educational attainment levels.

3. OBJECTIVES

- To study the pattern of information and communication technology (ICT) used for educational purpose by the students in the Tinsukia district of Assam.
- To examine whether there is any impact of ICT's on educational attainments by students in the area under study.

4. HYPOTHESIS

H₀: There is no significant difference between use of ICT's and educational attainments by students in the area under study.

5. DATA SOURCE AND METHODOLOGY

The study is based on primary data collected from 500 students from 7 blocks viz. Guijan, Hapjan, Itakhuli, Kakapathar, Margherita, Sadiya and Saikhowa blocks. The use of convenience sampling technique was used to collect the data from the structured questionnaires. A total of 105 students were selected from Guijan block, 45 students from Hapjan block, 90 students from Itakhuli block, 55 students from Kakapathar block, 75 students from Margherita block, 79 students from Sadiya block and 51 students from Saikhowa block respectively. The period of collecting data was from July, 2019 to February,

2020. To examine the ICT’s impact on educational attainments by student chi-square test was conducted.

6. FINDINGS AND DISCUSSIONS

To The role of information and communication technologies (ICT’s) in present is inevitable. ICT’s have a powerful impact in the process of teaching-learning. Use of ICT’s can go a long way in removing the barriers in the teaching-learning process and also help in enhancing the quality of knowledge imparted in students. To know the real picture of ICT’s impact on education a survey was conducted considering all the seven blocks of Tinsukia district, which is one of the top 10 districts in Assam in context of use of ICT’s. Responses were collected from the respondents (Students) from different categories i.e. H.S.L.C, H.S.S.L.C, Graduates and Post Graduates which are presented below in table 1.

Table 1 Educational Status of the Respondents

Blocks	Educational Level			
	H.S.L.C	H.S.S.L.C	Graduate	Post Graduate
Guijan	20(19.1)	45(42.9)	25(23.8)	15(14.3)
Hapjan	17(37.8)	12(26.7)	9(20)	7(15.6)
Itakhuli	29(32.2)	17(18.9)	32(35.6)	12(13.3)
Kakapthar	25(45.5)	9(16.4)	11(20)	10(18.2)
Margharita	16(21.3)	21(28)	32(42.7)	6(8)
Sadiya	23(29.1)	19(24.1)	19(24.1)	18(22.8)
Saikhowa	14(27.5)	11(21.6)	13(25.5)	13(25.5)
Total	144(28.8)	134(26.8)	141(28.2)	81(16.2)

Source: Field Survey, 2019-2020

Table 1 represents the educational level of students from the seven blocks of Tinsukia district viz. Guijan, Hapjan, Itakhuli, Kakapathar, Margherita, Sadiya and Saikhowa blocks respectively. From the survey, it was found that out of 500 respondents, 144 respondents i.e. 28.2 percent were H.S.L.C passed, 134 respondents i.e. 26.8 percent were H.S.S.L.C passed, 141 respondents i.e. 28.2 percent were graduates and 81 respondents i.e. 16.2 percent were post graduates. From the table 1 it is quite visible that Sadiya block has the highest post graduate holders i.e. 22.8 percent among the 7 blocks of Tinsukia district.

In context of awareness of ICT’s among the respondents for educational purposes, the responses recorded are presented in the table below.

Table 2 Awareness of ICT’s by the Respondents for Educational Purposes

Blocks	ICT’s Awareness	
	Yes	No
Guijan	97(92.4)	8(7.62)
Hapjan	42(93.3)	3(6.7)
Itakhuli	88(97.8)	2(2.2)
Kakapthar	49(89.1)	1(1.3)
Margharita	74(98.7)	6(10.9)
Sadiya	77(97.5)	2(2.5)
Saikhowa	51(100)	0(0)
Total	478(95.6)	22(4.4)

Source: Field Survey, 2019-2020

In table 2, out of 500 respondents about 96 percent are aware of the use of ICT’s for educational purposes and only 4 percent of the respondents were unaware of the use of ICT’s for educational purposes. Saikhowa block has recorded 100 percent awareness in context of

ICT's use for educational purposes, while, Kakopathar block has recorded the least (89.1 percent).

Table 3 Ability and Knowledge of ICT'S by Respondents for Educational Purposes

Blocks	Ability and Knowledge of ICT's Use	
	Yes	No
Guijan	97(92.4)	0(0)
Hapjan	42(93.3)	0(0)
Itakhuli	88(97.8)	0(0)
Kakapthar	49(89.1)	0(0)
Margharita	74(98.7)	0(0)
Sadiya	77(97.5)	0(0)
Saikhowa	51(100)	0(0)
Total	478(95.6)	0(0)

Source: Field Survey, 2019-2020

Table 3 represents the ability and knowledge of ICT's use among the respondents. Table 3 represents that all the respondents of the different blocks who are aware of use of ICT's for educational purpose have knowledge and ability to use ICT's for educational purposes.

The respondents were asked about the sources where they used the ICT's for educational purpose and their responses are represented in the table 4 below.

Table 4 Source of ICT's used by Respondents for Educational Purposes

Blocks	Sources			
	Home	Internet Cafe	Educational Institute	Others
Guijan	62(63.9)	3(3.1)	32(32.9)	2(2.1)
Hapjan	28(66.7)	5(11.9)	3(7.1)	6(14.3)
Itakhuli	52(59.1)	1(1.1)	22(25)	13(14.8)
Kakapthar	15(30.6)	4(8.2)	22(44.9)	8(16.3)
Margharita	39(52.7)	7(9.1)	31(41.9)	2(2.7)
Sadiya	25(32.5)	9(11.7)	42(54.5)	1(1.3)
Saikhowa	21(41.2)	9(17.5)	19(37.3)	2(3.9)
Total	242(48.4)	38(7.6)	171(34.2)	34(6.8)

Source: Field Survey, 2019-2020

Table 4 shows that majority of the respondents (242) used ICT's at home i.e. 48.4% of the total respondents. Out of them the highest was recorded from the Hapjan block (66.7 percent). About 80 percent of the respondents used ICT's for educational purposes from internet cafes, of which highest was recorded in Saikhowa block. 34 percent of the respondents used ICT's for educational purposes from educational institutes of which highest was recorded in Sadiya block. The rest 7 percent of the respondents used ICT's for educational purpose from some other sources. Kakopathar recorded highest in this aspect.

Table 5 Types of ICT's used by Respondents for Educational Purposes

Blocks	ICT's				
	Computer	Mobile	TV	Internet	Others
Guijan	89(91.8)	97(100)	42(43.3)	97(100)	3(3.1)
Hapjan	33(78.6)	42(100)	29(69.9)	42(100)	1(2.4)
Itakhuli	71(80.7)	88(100)	27(30.7)	88(100)	5(5.7)
Kakapthar	42(85.7)	49(100)	31(63.3)	49(100)	8(16.3)
Margharita	74(100)	74(100)	71(95.9)	74(100)	32(43.2)
Sadiya	77(100)	77(100)	59(76.6)	77(100)	4(5.2)
Saikhowa	46(90.1)	51(100)	40(78.4)	51(100)	15(29.4)
Total	432(90.4)	478(100)	299(62.6)	478(100)	68(14.2)

Source: Field Survey, 2019-2020

Table 5 represents the ICT’s used by the respondents for educational purposes. It was found that 100 percent of the respondents used mobile phones and internet for educational purposes in the study area. While only 14 percent of the respondents opt for other types of ICT’s like e-mail, fax, etc. About 90 percent of the respondents used computer and only 63 percent of the respondents used TV for educational purposes.

In order to know in details the use of ICT’s for the purpose of education, the frequencies of using ICT’s by the respondents were recorded which are presented below in table 6.

Table 6 Frequency of ICT’s used by Respondents for Educational Purposes

Blocks	Frequency			
	Daily	Once in a week	Once in a month	During exams/ project work
Guijan	89(91.8)	1(1.03)	0(0)	7(7.2)
Hapjan	32(76.2)	4(9.5)	0(0)	6(14.3)
Itakhuli	81(92.04)	0(0)	0(0)	7(7.9)
Kakapthar	25(51.02)	4(8.2)	2(4.1)	17(3.5)
Margharita	29(39.2)	7(9.5)	3(4.1)	35(47.3)
Sadiya	31(40.3)	12(15.6)	10(0)	24(31.2)
Saikhowa	12(23.5)	4(7.8)	8(15.7)	27(52.9)
Total	299(62.6)	32(6.7)	23(4.8)	123(25.7)

Source: Field Survey, 2019-2020

About 63 percent of the respondents used ICT’s daily for educational purposes out of which Itakhuli block recorded the highest daily users of ICT’s for educational purposes (92 percent). It was found that about 7 percent of the respondents used different types of ICT’s only once in a week. About 5 percent of the respondents used it for only once in a month and in this regard three blocks viz. Guijan, Hapjan and Itakhuli blocks recorded 0 respondents. Sadiya block recorded the highest in this aspect (16 percent). While about 26 percent of the respondents used ICT’s for educational purposes only during exams/ project work. Saikhowa block recorded the highest in this aspect with 52.9 percent respondents.

In order to examine whether there is any impact of ICT’s on education data were collected on the educational achievements of the respondents which are presented in table 7 below.

Table 7 Educational Achievements of the Respondents

Category	Blocks							
	Guijan	Hapjan	Itakhuli	Kakapthar	Margherita	Sadiya	Saikhowa	Total
H.S.L.C								
1 st Division	7(35)	6(35.3)	11(37.9)	9(36)	8(50)	12(52.2)	9(64.3)	62(43.1)
2 nd Division	4(20)	5(29.4)	4(13.8)	14(56)	5(31.3)	5(21.7)	1(7.1)	38(26.4)
3 rd Division	9(45)	6(35.3)	15(51.7)	2(8)	3(18.8)	6(26.1)	4(28.6)	45(31.3)
H.S.S.L.C								
1 st Division	13(28.9)	2(16.7)	7(41.2)	3(33.3)	7(33.3)	2(10.5)	6(54.5)	40(29.8)
2 nd Division	14(31.1)	6(50)	5(29.4)	2(22.2)	6(28.6)	5(26.3)	3(27.3)	41(30.6)
3 rd Division	18(40)	4(33.3)	5(29.4)	4(44.4)	8(39.1)	12(63.2)	2(18.2)	53(39.6)
Graduation								
1 st Class	7(28)	2(22.2)	7(21.9)	3(27.3)	11(34.4)	9(47.4)	2(15.4)	41(29.1)
2 nd Class	10(40)	6(66.7)	8(25)	4(36.4)	16(50)	4(21.1)	7(63.6)	55(39)
3 rd Class	8(32)	1(11.1)	17(53.1)	4(36.4)	5(15.6)	6(31.6)	2(15.4)	43(30.5)
Post Graduation								
1 st Class	2(13.3)	2(28.6)	7(58.3)	4(40)	2(33.3)	10(55.6)	3(23.1)	30(37.1)
2 nd Class	5(33.3)	1(14.3)	2(16.7)	3(30)	0(0)	4(22.2)	4(30.8)	19(23.5)
3 rd Class	8(53.3)	4(57.1)	3(25)	3(30)	4(66.7)	4(22.2)	6(46.2)	32(39.5)

Source: Field Survey, 2019-2020

Table 7 represents the respondent final achievement i.e. the educational achievement in the last degree obtained. From the table 7, it can be seen that in context of H.S.L.C passed about 43 percent of the respondents secured to get 1st division, 26 percent secured 2nd division and 31 percent secured 3rd division. In case of H.S.S.L.C passed about 30 percent secured 1st division, 31 percent secured 2nd division and 40 percent secured 3rd division. While in case of graduation, about 29 percent of the respondents secured 1st class, 39 percent secured 2nd class and 31 percent secured 3rd class. In case of post graduates about 37 percent respondent secured 1st class, 24 percent secured 2nd class and 40 percent secured 3rd class. From the table, it is quite visible that Saikhowa block recorded the highest in context of both H.S.L.C and H.S.S.L.C 1st division holders. While in case of graduation Sadiya block recorded the highest 1st class holders (47.7 percent). In post graduate holders the highest respondents were recorded in Itakhuli block.

In order to examine the impact of ICT's on education, Chi-Square test was conducted and the results are presented in table 8 below.

Table 8 Chi-Square Test

Test Statistics	Value	df	Asymp. Sig(two sided)
Pearson Chi-Square	71.716	3	.000
Likelihood Ratio	70.234	3	.000
Linear by Linear	14.490	1	.000
No. of valid cases		500	

Source: Author's Calculations

The Chi-Square test's results in table 8 above represents that the value of chi-square was 71.716 at three degrees of freedoms was found to be significant which means that our null hypothesis is rejected. Thus, the use if ICT has significant impact on educational attainments of student in the area under study.

7. CONCLUSION

Author name the use of Information and Communication Technology (ICT) in today's time is inevitable. ICT's plays an important part in increasing efficiency and quality in different spheres of human life. In almost all aspects such as economics, cultural, social, etc. ICT's helps in improving the quality of education. On the basis of this study we found that ICT's have a significant impact on education. Thus, proper and timely access of ICT's for educational purposes can go a long way in enhancing the quality of education. Thus, emphasis must be given to create awareness among those students who are unaware or less aware regarding the use of different ICT's which can help them to gain knowledge and improve their quality. Besides trainings can also be given free of cost by the government in certain ICT's which can help in improving the educational quality of the students. Certain subsidies can also be given by the government to the poor students so that they can also avail the benefits of these ICT's for educational purposes.

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